



PATENT
Customer No. 22,852
Attorney Docket No. 08144.0006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Edmar Saul MARCHEZE

Serial No.: 09/811,429

Filed: March 20, 2001

For: METHOD FOR USING A PRE-
GEL FOR PRODUCING SELF-
REDUCING AGGLOMERATES

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) Group Art Unit: 1742
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) Examiner: M. Andrews
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9/15/02

Assistant Commissioner for Patents
Washington, DC 20231

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Sir:

RESPONSE

This is in response to the Office Action dated March 14, 2002.

The Examiner rejected claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over Schmitt, U.S. Patent 6,071,325 in view of McGaa, U.S. Patent 6,342,089 and Kitamori et al., U.S. Patent 4,372,968. This rejection is not believe to be proper.

As recognized by the Examiner, Schmitt discloses a binder composition of a pregelatinized starch as a binder for agglomerating ore as well as minerals, such as coal and coke; however, this reference does not disclose or suggest the production of a self-reducing agglomerate, which is expressly recited in claims 1-3. This deficiency of Schmitt is not cured by combining the teachings of McGaa therewith as proposed by the Examiner.

Admittedly, McGaa discloses producing direct reduced iron pellets from iron oxide containing material, an internal reductant and a binder. There is no disclosure or suggestion, however, in McGaa of using a pre-gel as the binder as called for in all of claims

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1-3. The pre-gel called for in all of these claims is defined in Applicant's specification on page 6 as a modified starch that when submitted to temperatures of about 100 to 180°C for periods of time between 10 to about 60 minutes imparts mechanical properties to the agglomerate, particularly compressive strength, at least equivalent to those obtained with hydraulic cured agglomerates. This pre-gel is further defined on page 7 as a starch modified by temperature and pressure treatment wherein water is initially added and then removed to gelatinize the starch. The gelatinized starch is then ground to fine particles for use as a binder. The criticality of using a starch as so defined from the standpoint of increasing the strength of the resulting agglomerates is shown by the data presented in Table 1 on Applicant's page 7. There is no disclosure or suggestion in either Schmitt or McGaa, whether taken singly or combination, that if a pre-gel is used in the production of self-reducing agglomerates having a mixture of metallic oxide and carbonatious reducing agent that the use of a pre-gel as defined by Applicant will provide improved results, particularly improved compressive strength.

These deficiencies of Schmitt and McGaa are not cured by the teachings of Kitamori et al. There is no disclosure or suggestion of Kitamori et al. of employing the pregelatinized starch as disclosed in this reference as a binder for a self-reducing agglomerate.

Specifically, in this regard, Kitamori et al. describe the use of the disclosed binder only with sodium L-ascorbate granules. There is no disclosure or suggestion of using the pre-gel as a binder for mixtures of particles in any manner relating to metallic oxide particles and particles of a carbonatious reducing agent, as recited in all of the claims 1-3. In the practice of Kitamori et al., the binder is sprayed onto the sodium L-ascorbate particles. The particles are subjected to fluidization during this spraying. This practice in no way relates to the production of self-reducing agglomerates in accordance with the disclosure in Applicant's

specification. Hence, one skilled in the art producing self-reducing agglomerates for use in the production of metal and having a mixture of metallic oxide containing particles and particles of a carbonatious reducing agent would not look to the disclosure of Kitamori et al. of treating sodium L-ascorbate granules by spraying in a fluidized bed as providing any teachings that would relate to improving the strength of self-reducing agglomerates.

If the Examiner persists in this rejection, he is kindly requested to indicate where in Kitamori et al. there is any disclosure or suggestion of using the binder disclosed in this reference in the production of self-reducing agglomerates.

The Examiner's allowance of claims 4, 5 and 7-10 is respectfully acknowledged.

In view of the above, favorable reconsideration of Applicant's claims 1-3 with a view to allowance is earnestly solicited.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: August 30, 2002

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